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Improving the Viability of Existing Small Drinking Water Systems

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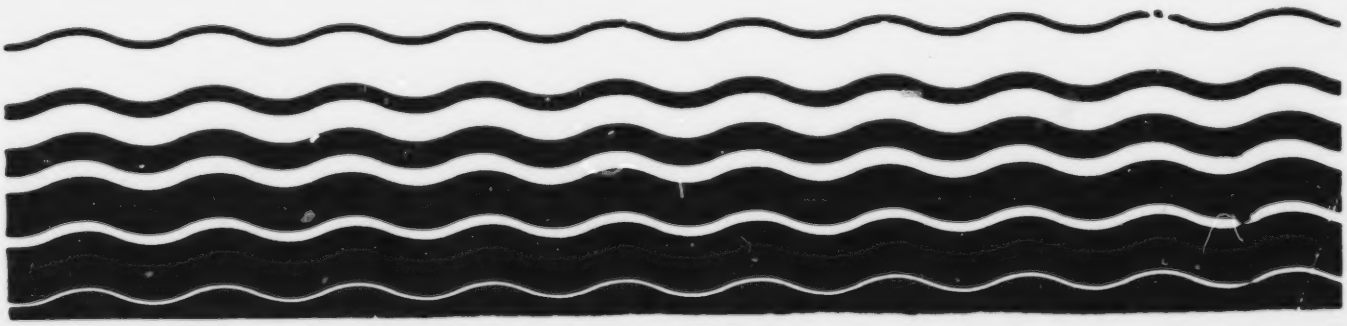

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1.0 INTRODUCTION

1.1 Purpose and Organization of This Report

Small water systems (defined by the U.S. EPA as those that serve fewer than 3,300 persons) represent a substantial portion of those systems that fail to comply with safe drinking water regulations. State drinking water administrators are aware of the reasons why small systems are in non-compliance more often than larger ones. Briefly, the barriers small systems face in complying with regulations include:

- Lack of technical knowledge of State and Federal requirements and how to meet them;
- Lack of information on sources of assistance;
- Lack of economies of scale, leading to a high per-customer cost of operations;
- Lack of financial capacity; and
- Lack of affordable technologies to comply with existing and new regulations.

Implementation of the 1986 Amendments to the Safe Drinking Water Act (SDWA) will exacerbate the problems facing small systems, many of which are already marginal operations, by imposing additional regulatory requirements.

The purpose of this report is to disseminate information to State drinking water administrators about successful initiatives that their colleagues have used to address some of the problems of small drinking water systems. We have organized this report into three chapters. The first introduces the basic concepts that will be used throughout the report. The second chapter presents brief discussions of each of the initiatives, including case studies of successful programs and the names and telephone numbers of persons to contact for additional information. Chapter 3 presents a set of recommendations concerning how you, as a State drinking water administrator, can implement these initiatives in your State.

1.2 Solutions to the Problem of Non-Viable Small Systems

In a previous report, EPA's Office of Drinking Water (ODW) addressed the problem of new non-viable small drinking water systems. As reported in that study, several States have begun to take steps to prevent new non-viable systems from being created.[1] The

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[1]U.S. Environmental Protection Agency, "Ensuring the Viability of New, Small Drinking Water Systems," EPA-570/9-89-004, April 1989. In that report and this one, a "non-viable" system is one having technical, financial, or managerial weaknesses that will likely render it incapable of complying with drinking water regulations.

The Department of Environmental Resources in Pennsylvania is currently conducting a study on viability to do the following: develop viability assurance criteria and other requirements for new systems seeking permits; develop a simplified screening method that

focus of this report, in contrast, is on actions that States have taken to deal with existing non-viable small systems.

The range of solutions to the problem of non-compliance by small water systems is broad. ODW has identified the following approaches to remedying small system non-compliance:

- Contract operations and management (O&M)
- Mergers and acquisitions
- Enforcement
- Financial assistance (grants and loans)
- Technical assistance
- Information dissemination
- Training
- Affordable standardized technologies
- Cooperatives.

One or more of these solutions is relevant to each of the barriers to compliance identified above. For example, if the barrier is a lack of affordable technologies for removal of contaminants, then one solution would be to work with vendors to develop affordable and easy-to-install package treatment technologies. If the barrier is lack of information about State and Federal requirements, then solutions might include training, technical assistance, and information dissemination to small system owners and operators.

1.3 Solutions to Diseconomies of Scale

The focus of this report is on solutions that address the problem of developing economies of scale, a fundamental issue facing small water systems. All water systems, regardless of size, incur costs associated with operation and maintenance, management, and capital investment in plant and equipment. As in any enterprise, the cost of a good or service per unit purchased is generally less the larger the size of the purchase. Small systems cannot purchase in large amounts, so they pay relatively high unit prices. Similarly, the larger the customer base, the lower the cost per customer of a particular purchased item. But by definition, small systems have a small customer base, so the impact of costs on water rates is relatively higher than for larger systems.

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utilizes viability factors to evaluate the potential viability of proposed new systems; and develop a model law or regulation which sets minimum viability requirements delineating how viability factors will be coordinated with control activities of other agencies.

Three of the solutions listed above address the problem of diseconomies of scale. These are:

- Contract O&M
- Cooperatives
- Mergers and acquisitions.

By contracting out for O&M services, a small water system may avail itself of the economies of scale already achieved by a firm that provides O&M to many clients. In a merger or acquisition, the small system becomes part of a larger system, taking advantage of the economies of scale achieved by the acquiring entity. In cooperatives, several small systems join together to buy goods or services, decreasing their per-unit costs by increasing the size of their purchases.

Many State drinking water administrators have seen the potential advantages of these solutions to the problem of non-compliance by small drinking water systems. The remainder of this report explains how implementation of these approaches can be promoted in your State.

1.4 Variations in Terminology

Industry professionals use many terms to describe the three solutions listed above. Representatives from EPA's Office of Drinking Water informally asked Regional Office and State personnel what terms they used to describe these phenomena. While regional usages vary substantially, and many different "terms of art" have developed, these basic concepts are widely understood. For example:

- The following terms describe contract O&M: satellite management, third-party operator, service contract, privatization, and turn-key operation.
- A "big brother" arrangement is contract O&M provided by large water systems on a voluntary, altruistic basis.
- Acquisitions and mergers may be described as: satellite ownership, takeovers, buyouts, consolidations, regionalization, spaghetti systems, or consecutive/secondary systems.

The term most likely to be misinterpreted is "cooperative." It often is used to describe "mutuals" or "homeowners associations." These organizations are *groups of homeowners* who collectively own a water system. In this report, "cooperative" refers to *groups of water systems* that buy and share goods and services.

2.0 APPROACHES TO OVERCOMING PROBLEMS OF SCALE: DESCRIPTIONS AND CASE STUDIES

2.1 Introduction

There are many ways that small drinking water systems can address the absence of economies of scale. Three groups of solutions are considered in this report:

- Contracting for operations and maintenance (O&M)
- Cooperatives
- Mergers and acquisitions.

Within each of these groups, there are several methods of implementation that may be used. For example, when contracting for O&M, systems may choose:

- A private service company that specializes in these services; or
- A large water utility that provides these services as an ancillary business function.

This chapter presents brief discussions of the methods by which each of these techniques may be implemented. The general discussion of each option is followed by case studies that illustrate actual implementation in a State. Each case study contains the name and telephone number of a knowledgeable individual who can be contacted for additional information. Documents relevant to each option (contractual agreements, regulations, statutes) are located in the appendices.

2.1.1 Defining the Terms

Before turning to the case studies, we must define some of the terms that will be used in the remainder of this chapter. For the purpose of this report, each term will be defined as it is presented.

While all of the options address the economy-of-scale problem facing small water systems, there are important distinctions among the options. Of the three, only mergers and acquisitions involves the transfer of assets of the entities involved. Contract O&M and cooperatives do not involve this fundamental change. Instead, they represent methods by which small systems overcome their lack of economies of scale, either through buying services from larger entities that have such economies, (e.g, private O&M service companies), or by creating new entities that have such economies (e.,g., cooperatives).

These distinctions are important in differentiating "satellite management" and "satellite ownership." Satellite management is a form of contracting for O&M where the contractor is a large water utility or water district. Small utilities that use the contracted services are "satellites" of the large system. Satellite ownership, in contrast, refers to an

asset transfer: a large utility acquires a small utility, but does not physically interconnect the two systems.[1]

The distinction between O&M contracting and cooperatives is more subtle. In both cases, there is no asset transfer. In the former, small systems buy services. In the latter, small systems join together (formally or informally) to purchase goods or services cooperatively. Cooperatives usually require that there be a group of small systems, but this is not always the case.

[1]In Washington the term satellite management is used to refer to large utilities and water districts that own small water systems as well as those that contract their services to small systems. Usually the large utility or water district will manage a small system for a period of time before taking over its assets.

2.2 O&M Contracting

A common cause of non-compliance by small water systems is failure to monitor and report the concentration of regulated contaminants. Other causes may include equipment problems, e.g., a pump that breaks or a chlorinator that malfunctions. Many of these deficiencies occur because small systems lack the necessary trained personnel. In such cases professional help may be obtained by contracting for O&M assistance. Typically, this outside assistance is provided by a private company that supplies a range of services including:

- Routine maintenance,
- Monitoring and reporting,
- Managerial services, or
- System improvements.

By contracting with a firm that specializes in these services, the small water system may gain access to economies of scale that are otherwise not available to it.

To obtain these services, a contract usually is executed between the system and the provider to specify the services to be offered, the legal obligations of the parties, and the fees for services. As new State and Federal regulations are implemented, small water systems may increase their use of O&M services. State drinking water agencies may wish to encourage O&M contracting as a method to resolve many of the problems small systems face in meeting these new requirements. This section describes O&M services, employing case studies to give examples of its implementation in several States.[2]

The emerging need for O&M contracting has created an industry that offer contractual assistance to small water systems. Private water service companies are the leading providers of O&M contracting. These companies include, but are not limited to, the following:

- Engineering firms and their subsidiaries,
- Small businesses that specialize in the provision of O&M and monitoring services to drinking water systems, and
- Wastewater service firms that have extended their business to drinking water systems.

Just as O&M contracting companies differ, so do the services they provide to small water systems. In most cases, service companies provide personnel who perform routine monitoring and reporting. However, companies may offer other services which include the following:

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[2] Technical assistance, such as that provided by the States, the National Rural Water Association (NRWA), or Rural Community Assistance Programs (RCAPs), is not discussed in this chapter. Unlike O&M services, technical assistance is not regularly provided to water systems and does not require a fee for services.

- Regulatory advice,
- Minor maintenance and repair work,
- Financial analyses, and
- Assistance in management, bookkeeping, and rate setting.

Private water service companies are most effective at assisting small water systems that do not need major structural repairs. If a system has a chlorinator that is not working properly, or if it needs advice on how to collect its overdue bills, a private water service company can perform these services. On the other hand, if a system needs to install a new treatment technology or extend a water main, or if its customer base simply is inadequate to support its operations, the system should consider other options.

O&M contracting is an affordable and efficient option for small water systems. Because their operations do not require constant attention, small systems often do not need full-time operators. Therefore, instead of hiring full-time operators themselves, small systems can contract with private service companies to obtain certified operators on an as-needed basis.[3] For example, personnel from the service companies can:

- Perform routine operations and maintenance,
- Implement system repairs to maintain compliance, or
- Make emergency repairs.

Although O&M contracting will not remedy major plant or equipment deficiencies, it can help to resolve many cases of non-compliance that result from lack of trained personnel.

The following three case studies illustrate how O&M contracting is currently being used.

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[3]Some States may prohibit small systems from using part-time operators. For example, the operator certification requirements in Ohio specify that certified operators be "full time employees."

WATERGUARD, INC--O&M CONTRACTING

SUMMARY: Waterguard demonstrates how small systems in Oregon use O&M contracting to obtain regulatory advice, routine testing, and maintenance work, as well as financial analysis, rate-setting advice, and bookkeeping.

To found Waterguard, the owner obtained a list of the regulated systems in Oregon, targeted the ones serving fewer than 300 connections, and sent them flyers announcing the services he could offer. A few systems responded immediately, but not until the mandatory certification law was passed did Waterguard acquire a substantial number of clients. Waterguard currently has contracts with 32 systems, of which about half are mobile home parks. The rest include educational institutions and sub-divisions. The average size of a mobile home park served by Waterguard is approximately 100 connections, while the average size of a sub-division is approximately 50 connections.

Waterguard offers a wide variety of services to small water systems. The company performs routine maintenance, monitoring and reporting (for bacti and turbidity), and system repairs. It also provides management services such as financial analysis, rate-setting advice, and bookkeeping. Furthermore, Waterguard will help small systems comply with new State drinking water regulations. For example, the firm will write the annual report that State law requires from each operator. Waterguard also provides emergency assistance.

When Waterguard is hired by a small water system, both parties sign a Memorandum of Agreement. An example of the Memorandum is provided in Appendix A.

On average, Waterguard charges its systems $90.00 per month for routine O&M.

FOR INFORMATION CONTACT:

Jim Boydston, Manager
Drinking Water Program, Health Division
1400 S.W. 5th Avenue, Rm. 611
Portland, OR 97201
503-229-6310

WASTEWATER SERVICES, INC.–O&M CONTRACTING

SUMMARY: Wastewater Services is another example of an O&M contracting company used by small systems to improve compliance with SDWA and State regulations.

Wastewater Services was created 13 years ago by a certified operator to provide contractual assistance to small public water systems. Currently, Wastewater Services has 30 employees and has contracts with approximately 20 systems in western North Carolina. Most of the contracts are with systems that have fewer than 150 connections.

Wastewater Services offers a wide variety of services to small systems, but it mainly performs monitoring and reporting. Wastewater Services has a laboratory to provide testing for bacteriological and inorganic contaminants. Additionally, if systems need infrastructure work, the company has a construction section. Wastewater Services does not, however, provide financial services such as rate-setting or bookkeeping advice.

The fees depend on the services provided. The average cost of a certified operator who will be responsible for routine O&M functions is $250 per month.

FOR INFORMATION CONTACT:

Bob Barr
Wastewater Services, Inc.
P.O. Box 18029
Asheville, NC 28814-0029

CROSBY WATER AND SEWER SERVICES, INC.--O&M CONTRACTING

SUMMARY: Crosby Water and Sewer Services is an example of how a mobile home park owner became a certified operator and created a business providing O&M services to other nearby system owners.

Crosby Water and Sewer Services was created by a mobile home park owner who had experienced difficulty in operating her water system. After she became certified, a few neighboring systems informally asked her for assistance. In 1985, she and her husband decided to start a water and wastewater service business. Today, they assist approximately 19 wastewater and 19 water systems. The company consists of four full-time certified operators who serve systems within a 35-mile radius, mainly in Wake County. Most of Crosby's contracts are with mobile home parks and housing developments that have an average size of 75 service connections.

According to Crosby, each customer has a unique set of service requirements. In general, they provide monitoring, reporting, and routine maintenance work. There is at least one system that they completely manage. For this system they read meters, handle customer billing, and perform routine O&M work. Crosby also provides emergency assistance to any system it serves. There is a 24-hour answering service that systems may call when a problem arises. Before Crosby performs any major work, it makes recommendations and obtains approval from the system. The firm usually is authorized to incur up to $100 in costs without seeking approval.

Crosby's fees depend on the services performed. For routine O&M work, it charges approximately $100 per month. For a system that it completely manages, Crosby charges $550 per month.

FOR INFORMATION CONTACT:

Don Williams
Regional Engineer, Drinking Water Division
Fayetteville, NC
919-486-1191

2.3 Satellite Management

Satellite management is a form of O&M contracting in which the provider of services is a large water utility or water district, rather than a private service company. In most other respects, this option is identical to that described in Section 2.1. Since satellite management is an increasingly popular option, and since it reflects an emerging trend of large systems providing services to small systems, we elected to give it a separate section of this report.[4] In the following paragraphs we describe satellite management and provide a case study to show how it has been successfully used.

The most common example of satellite management is when certified operators from large utilities perform routine O&M work for nearby small systems. Like private water service companies, large water utilities assist small systems by performing scheduled and emergency repairs, daily operations and maintenance, and monitoring and reporting. Occasionally, large utilities will also offer administrative or financial services.

Satellite management functions in the same way as other O&M contracting. Contracts are used to define the frequency, duration, cost, and specific responsibilities of the service provider. Additionally, satellite management is most effective when small systems need trained operators to manage daily operations or perform routine monitoring and reporting functions. Small systems with more severe problems should consider other options, e.g., public or private mergers.

Satellite management offers many advantages. By providing qualified personnel and improved system management, satellite programs help small water systems meet new and existing State and Federal drinking water requirements. Additionally, satellite management enables small systems to share the economies of scale available to large systems. Small systems that cannot afford a full-time operator can hire a large utility to provide the services of a certified operator on an as-needed basis.

The following two case studies illustrate how satellite management is currently being used.

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[4]Satellite <u>management</u> should not be confused with satellite <u>ownership</u>. Satellite ownership involves the transfer of assets from a small utility to a large utility. It is, therefore, a variation of mergers and acquisitions and will be discussed later in this chapter. We also distinguish satellite management from the <u>pro bono</u> technical assistance being provided by large utilities in the form of "big brother" or "adopt-a-system" programs. The term satellite management, as used in this chapter, involves a contractual, fee-for-service relationship between the provider and recipient of services.

SOUTHERN NEW HAMPSHIRE WATER COMPANY–SATELLITE MANAGEMENT

SUMMARY: Southern New Hampshire Water Company is an example of a large water utility providing O&M services to a small municipal water system through a satellite management program.

In late 1989, Southern New Hampshire Water Company and Derry Waterworks entered into a satellite management arrangement. Southern New Hampshire is a large utility that provides water to many cities in southern New Hampshire. Derry Waterworks is a small municipal system that wanted to contract out for O&M services. Previously, Derry used private service companies for O&M services. This year, however, Southern New Hampshire had the lowest bid for services and was awarded the contract.

Southern New Hampshire provides Derry with operations and maintenance services. A contract between the two companies specifies the services to be rendered. These include: providing a certified operator; performing daily operations; reading meters; performing sampling, monitoring, and reporting; and implementing backflow prevention. Derry performs all other system functions.

Southern New Hampshire Water Company charges an hourly fee. Information on specific fees is confidential.

FOR INFORMATION CONTACT:

Larry Gingrow
Southern New Hampshire Water Company
322 Nashua Rd.
Londonderry, NH 03053
603-882-3322

PUBLIC UTILITY DISTRICT NO. 1 OF KITSAP COUNTY–SATELLITE MANAGEMENT

SUMMARY: Public Utility District No. 1 of Kitsap County is an example of a small Homeowner's Association contracting with a large public water system for a comprehensive system assessment.

Public Utility District No. 1 of Kitsap County, Washington is a public water system which serves approximately 4,000 people. As a PUD, the system has jurisdiction over the entire county and is able to borrow money, contract indebtedness, issue bonds, and levy taxes. Currently, the PUD owns and operates a number of small water systems in the county and has just begun to provide contract O&M services.

The Sandy Hook Community Club, a Homeowner's Association in Poulsbo, Washington recently contracted with PUD No. 1 for a comprehensive assessment of its water system. Sandy Hook needs assistance in determining what system improvements should be made in order to deliver better water quality to its 75 residences. PUD No. 1 was contracted to do the following: document above-ground problem areas; evaluate the steel main and water services to determine approximate conditions below ground; revisit the source and storage locations to evaluate the physical and mechanical operations; and prepare a report detailing findings and recommendations to resolve system deficiencies. The contract is short-term; the services will be completed within 45 days of the final signature date. Once the assessment is completed, Sandy Hook may agree to have the PUD perform the necessary improvements. It may also agree to have the PUD assume long-term management of the system.

All labor and professional hours will be billed hourly. All materials and equipment that the PUD uses in executing the contract will be billed at cost plus 10 percent for handling. The contract stipulates that the total cost of services cannot, however, exceed $500.00.

FOR INFORMATION CONTACT:

David Siburg, Assistant Manager
PUD No. 1 of Kitsap County
1431 Finn Hill Road
Poulsbo, WA 98370
206-779-7658

2.4 Cooperatives

Small water systems may join together to buy or share goods and services. If they create a new, independent entity to perform this function, this entity is called a "cooperative." If no new entity is created, we refer to the arrangement as an agreement to "cooperatively purchase" goods and services.

By joining together, in either form, small systems can achieve greater economies of scale and reduce the unit prices of their purchases. Examples of goods and services that may be purchased more cheaply include: operation and maintenance services, lab services, chemicals, and equipment. For example, if State regulations permit, a group of small systems could save money by hiring one certified operator to serve the entire group. Cooperatives may also be able to share equipment, such as construction machinery that is not in continual use. In addition to the cost savings that might be achieved, an additional feature of cooperatives is the forum they create for sharing knowledge about regulations, pricing, and solutions to common problems.

Water cooperatives are most appropriate for systems that are structurally sound. For these systems, cooperatives can be an effective way of reducing the costs of goods and services. If, however, a system is non-viable–because of major technical, financial, or managerial deficiencies–then mergers and acquisitions may be a more appropriate option.

The formation of a water cooperative is more complex than contracting for O&M services. A cooperative implies coordinated activities by two or more systems. Whether this involves the creation of a new entity or simply an informal agreement, effort must be devoted to management. If there is a new entity, it will charge a membership fee; systems who fail to pay the fee will lose their membership. If there is an informal purchasing arrangement, it will depend on the voluntary contributions of time from its members to get quotes from vendors, place orders, and deliver the goods. Members who do not do their share will lose their right to participate. Small system owners and operators are often independent. Because of this, some systems fear delegating responsibility to an organization that it cannot completely control. This may limit the feasibility of the cooperative option.

The simplest type of cooperative purchasing may result from large systems helping small systems. These arrangements can be quite effective. For example, North Havre Water District in Montana, a small water system serving approximately 20 or 30 farms, purchases liquid alum from the City of Havre, which serves 10,600 people. The City of Havre can purchase liquid alum by the tanker truckload, while the North Havre Water District purchases it by the barrel. Since the City of Havre purchases liquid alum in bulk it can offer North Havre Water District a much better price than the manufacturer would.

2.5 Public Mergers, Acquisitions, and Formation of Public Systems

This section discusses how public mergers, acquisitions, and the form. on of publicly owned water systems can be used to resolve small-system viability p blems. Small water systems can achieve economies of scale in many ways. They can:

- Merge with publicly owned water systems;
- Be acquired by publicly owned water systems; or
- Form new publicly owned water systems such as water district fire districts. benefited water districts, or public utility districts.

The new systems that result have:

- A larger customer base,
- Increased access to capital, and
- Eligibility for State grant and loan funds.

The actions taken to merge or form a new public system can be done volun rily, or they can be required by State drinking water agencies.

A public merger or acquisition occurs when publicly owned water sys ms assume ownership of another water system. Public mergers are distinguished from p vate mergers in that the resulting company is a public entity, i.e., a municipality, a county. water district, or other substate governmental unit. The entities that are acquired merged can be either privately or publicly owned. A typical example is a municipal wate system acquiring a small, privately owned system outside its service boundaries. Mc ers or acquisitions do not necessarily involve physical interconnection of the system involved. A common form of public acquisition is called "satellite ownership," in which a rge publicly owned system owns and operates a small system that is not physically interc nected.

Mergers may result from the State primacy agency's requirements, or ey may result from a publicly owned system's plans to expand its service area. Although t regulations vary from State to State, public mergers, acquisitions, and the formation of r v public systems generally require approval by the primacy agency. The agency will concerned with such issues as:

- How the acquired system owner will be compensated (if the s tem is privately owned), and
- Whether the planned merger is consistent with construction a operation permit requirements.

According to a 1986 study by the National Regulatory Research Institute[5], mergers and acquisitions by publicly owned systems outnumber mergers and acquisitions by privately owned systems by a margin of more than two to one. The principal reason for this is that large water systems are usually publicly owned and serve a much greater percentage of the population than do privately owned systems. As shown in Table 2.1, the percentage of public ownership increases with system size. Most water systems having the management and financial capability to absorb small, non-viable systems are publicly owned.

Table 2.1: Ownership of Community Water Systems

	Number of Systems[6]			
	Size of System (persons served)			
Type of Ownership	25-500	501-3,300	>3,300	Total
City	967	835	953	2,755
Federal	219	127	243	589
Municipality	4,257	6,258	3,756	14,271
County	338	191	206	735
State	568	445	166	1,179
Authority/District	1,496	1,958	992	4,446
Total Public	**7,845**	**9,814**	**6,316**	**23,975**
Total Private	**20,488**	**2,862**	**309**	**23,350**

Source: Federal Reporting Data System, FY 1988 data

Mergers of, or acquisitions by, publicly owned systems may also be increasingly popular for one or more of the following reasons:

- Counties or municipalities with established water utilities frequently expand to meet new demands within or adjacent to their jurisdictions. In many States, county water districts are willing to provide service when small water systems within their borders become non-viable.

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[5]Commission Regulation of Small Water Utilities: Mergers and Acquisitions; The National Regulatory Research Institute; Columbus, Ohio; 1986

[6]Excludes systems classified as "other" and "unknown" in the FRDS database.

- Some States require publicly owned water systems to take over privately owned water service if a small system is failing.[7]

- Grants and loans are frequently available to finance publicly owned water systems, but usually are not available to privately owned water systems.

- Some publicly owned systems have the authority to raise revenues through taxes. These revenues can be used to fund system expansion and improvement.

- Most publicly owned systems can issue tax-exempt revenue bonds, giving them access to low-cost funds for expansion or system upgrades.

- Many public owned systems have the power of eminent domain in their operating areas.

States have adopted different strategies to encourage public mergers. Vermont promotes public mergers with a program of grants to support the formation of regional water districts.[8] Maryland requires every county to have a plan detailing the financing and operation of all existing and planned water systems.

Two-thirds of the States have enabling legislation for the formation of water districts. In many States, residents may vote to form a water district. Water districts are publicly owned systems eligible for State grant funding, tax advantages, eminent domain, and the ability to incur bonded indebtedness. Water districts are most effective when they are formed on a county-wide basis, according to an American Water Works Association Research Foundation-sponsored study.[9]

Many of the benefits of mergers and acquisitions by publicly owned systems can be traced to the economies of scale that a large operation makes possible. An expanded customer base enables the hiring of competent, certified operators. The unit cost of treating water decreases with the size of the treatment plant. A large water system can afford the management and administrative structure required for billing, accounting, record-keeping and planning.

In the following pages we present three case studies. One describes an acquisition by a publicly owned system; the second illustrates the formation of a new publicly owned system; and the third demonstrates the construction of a new regional water system.

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[7]Maryland and Washington are two examples of States having laws that facilitate public mergers.

[8]"The Role of the States in Solving the Small System Dilemma." American Water Works Association Research Journal, vol. 80, no. 8, August 1988, Pp. 32-37.

[9]McCall, Robert G. Institutional Alternatives for Small Water Systems, Denver, CO: American Water Works Association Research Foundation, 1986, p. 41.

WASHINGTON COUNTY SANITARY DISTRICT–PUBLIC ACQUISITION

SUMMARY: The following case study shows how a State can require a public merger as a way of solving small system problems. In this case study, a municipal water system extension was ordered by the primacy agent to provide safe drinking water to residents outside the boundary of the publicly owned water system.

Maryland requires each county to develop a plan of its water systems' operations, including satellite programs and mergers. The State also has the statutory authority to require a public water system to be constructed or for an extension to occur.

In 1981, residents of the Martin's Crossroads-Cearfoss area of Washington County experienced an outbreak of Hepatitis A due to bacteriological contamination. After determining that water quality problems could not be corrected by the existing systems, the Maryland Department of Environment (MDE) ordered Washington County to develop a feasibility study for extending water service from the City of Hagerstown water system to the Martin's Crossroads-Cearfoss area, to develop a construction schedule, and to implement the extension by a specified date. The Martin's Crossroads-Cearfoss area contained 218 homes at the time of the order.

The county plan examined all options for complying with the order and determined the most cost-effective method of meeting current and expected future water demand. This plan was then submitted to MDE prior to system extension. Funds for the extension were provided from user fees, Washington County general revenues, and the State Sanitary Facilities Fund. The area was included in the county plan as a sanitary subdistrict, and all customers in the designated area were required to hookup to the water system. The cost of water service for the new customers was equivalent to that paid by the city's original customers.

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LAKEWOOD VILLAGE--FORMATION OF A PUBLIC SYSTEM

SUMMARY: The Lakewood case shows how the formation of a publicly-owned water system can allow small systems to finance needed system improvements. After obtaining a FmHA loan, the Lakewood system interconnected to and purchased water from a neighboring municipal water system.

Lakewood Village is a subdivision containing approximately 500 single-family homes; it is located two miles south of Des Moines, Iowa. Lakewood's developer sunk a deep well to provide water to the community because interconnection with existing systems was not feasible. The water contained high levels of dissolved minerals and was corrosive. Residents complained about staining of clothes, deterioration of plumbing fixtures, periodic water outages, and declining property values as the result of poor water quality. Because of high costs, the owners of the subdivision did not fully treat the water and were often before the public utilities commission, contesting water rate adjustments with the residents.

In 1981, some of Lakewood's residents proposed forming a "benefited water district" and purchasing the system from the developer. Under Iowa law a "benefited water district" is a quasi-public entity with its own taxing and bonding authority. As a public system, Lakewood would be able to purchase water from the Des Moines Water Department, eliminating the well and, hence, the source of the problem. After the residents submitted a petition, the County Board of Supervisors held hearings and formed the District without objection.

In a special election, three trustees were chosen and given, by simple majority vote, the authority to incur debt on behalf of the district. Residents also approved a special property tax assessment to pay back the loan used to buy the system. The trustees negotiated a purchase price with system owners with funds from a $500,000 FmHA loan at 5 percent simple interest. To repay the debt, homeowners agreed to a special ten-year assessment equally apportioned to each house owner. The newly formed Lakewood Benefited Water District negotiated the wholesale purchase of water from the City of Des Moines, ensuring a plentiful source of high-quality water. Lakewood Village water rates were established at approximately 1.5 times the rates paid by Des Moines residents.

By forming a benefited water district and buying their system from a developer no longer interested in the water business, Lakewood Village obtained better water and eliminated problems that had plagued the system for almost 20 years, while retaining local control.

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NORTH LAKEPORT–FORMATION OF A NEW PUBLIC WATER SYSTEM

SUMMARY: North Lakeport demonstrates how a county can take the initiative to consolidate existing small water systems by forming a regional system.

The North Lakeport project is located in Lake County, California, and has a population of fewer than 50,000 people. The county has a considerable number of small resorts, mobile home parks, and subdivisions that have their own water systems. Prior to 1981, the county had a limited regulatory program for small water systems, most of which did little or no treatment. The county had concerns about the quality of the finished water these systems provided.

In November of 1984 and 1986 the voters of California approved the Safe Drinking Water Bond Laws, which provided $150 million of low-interest loans and grants for water system construction needed to correct public health problems. The California Department of Health Services identified North Lakeport as a potential area for a regional water system and the County Special District Office was invited to submit an application for funding. To prepare the application and define the essential projects, the county hired an engineering firm to conduct a feasibility study, which was completed in June of 1985. The study recommended forming a regional system that would consolidate the 41 existing small systems and individual homes which had inadequate water quality; the Lakeside Community Hospital; the County's Juvenile Hall detention facility; four new residential developments; and the County's planned minimum-security prison for 500 prisoners.

On the basis of the engineering feasibility study the county's application was completed and the State of California made a commitment to provide $5 million in low-interest loans and a $400,000 grant. Having the necessary funding and technical details, the county initiated proceedings to form an assessment district to assure that the State loan could be repaid. Several public meetings were held to discuss the details of the project and its costs. The County Health Department maintained that small systems would need to make significant and costly improvements in order to comply with regulations and ensure adequate water quality. The voters in the county decided that forming a regional system was the least costly solution and the district was approved in October 1989. The construction of the new regional system began in January 1990.

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2.6 Private Mergers Or Acquisitions

Private mergers and acquisitions involve the transfer of ownership of a water system's assets to a privately owned water company. Prior to the transfer of assets, however, the acquired system may be either publicly or privately owned. Mergers and acquisitions by a privately owned water system may occur as the result of a State order, or they may occur voluntarily. Mergers do not necessarily include physical interconnection of the water mains. Therefore, mergers or acquisitions by privately owned systems include satellite ownership, as defined in Section 2.3, above.

Mergers and acquisitions reduce the number of small systems. Small water companies merge when a combined operation offers financial or managerial advantages compared to independent operation. Similarly, private utilities acquire small water systems when they believe that economies of scale would yield a profit or result in improved operations. In either case, the joined companies are more likely to have the technical capability, access to financing, and management supervision that many small systems lack, which leads to better quality water and improved compliance with regulations. It is these benefits that make merger and acquisition by privately owned systems attractive.

Because of their asset base, large utilities can afford the improvements that many small systems sorely need. Large companies also have greater access to capital and can spread fixed costs over a wider customer base. Having economies of scale, they can hire more competent personnel, undertake planning, provide for routine maintenance, and react more quickly in emergencies. Their larger size makes it easier for merged companies to deliver water that consistently meets State and federal regulations.

The terms of private mergers are usually reviewed by either the primacy agency or the State public utility commission (PUC). Primacy agencies review proposed mergers to determine whether the new system will comply with operating permit requirements. Similarly, PUCs review proposals before granting operating permits, called Certificates of Public Good. PUC regulation is one of the features that distinguish private mergers from public mergers. PUCs conduct hearings to determine if the acquisition is in the public interest, to set rates, and to determine whether acquisition costs should be recovered through rate increases.

State regulation of private mergers can insure that a small system's problems are addressed in a timely fashion after acquisition. Financial, operational, and managerial reviews of the terms of the merger and the schedule of system improvements is vital to ensure that customers are adequately served. Some States can force mergers when a small system is in gross violation of standards and is financially incapable of correcting the problems.

State regulation of voluntary mergers can ensure that they are an effective way of addressing small system problems. Voluntary private mergers and acquisitions usually occur when the private companies involved determine that financial restructuring is advantageous for both companies involved. A recent study of voluntary private acquisitions showed that

the acquiring company is usually motivated by the wish to expand its customer base and service area.[10] The acquired system usually wishes to get out of the water service business.

In addition to the PUC's authority to regulate the terms of a proposed merger Connecticut has the authority to order a company to take over a failing system. In 1984 and 1985, Connecticut enacted legislation that allows the State Department of Health Services (DOHS) and Department of Public Utility Control (DPUC) to order the takeover of small, failing water systems. Working together, the departments conduct public hearings, determine the most suitable entity to acquire the small system, and decide what constitutes a fair price for the takeover and how acquisition costs will be treated in the rate base. As the following case shows, Connecticut's legislation allows the State to use private restructuring to eliminate many of the problems associated with small systems.

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[10]Patrick Mann, G. Richard Dresse, "Commission Regulation of Small Water Utilities: Mergers and Acquisitions, NRRI, Chapter 4.

ACQUISITION OF GREENACRES WATER SUPPLY–PRIVATE MERGERS

SUMMARY: The Greenacres case study shows the combined efforts of the PUC and primacy agency to require a takeover in order to alleviate water systems non-viability.

Greenacres Water Supply had difficulty complying with a DOHS order to submit a plan for improvements to enhance water quality and increase water supply. Greenacres' owners did not have the resources to comply with the order and notified DOHS that they wanted to leave the water business. DOHS asked DPUC to conduct a hearing about the system. During the hearing, two water companies, Bridgeport Hydraulic Company (BHC) and Tyler Lake Water Company, expressed interest in purchasing and operating Greenacres as a satellite system. Although the owners of Greenacres and Tyler Lake negotiated a purchase price of $10,000 for the system, the Consumer Counsel opposed the price as excessive. After examining the financial records of Greenacres and considering the improvements that the system required, DOHS and DPUC determined that Bridgeport Hydraulic was a "more suitable entity" to own and operate Greenacres.

The joint decision addressed several points raised during the proceedings. The examination of Greenacres' financial records and the cost estimates for the system upgrade revealed that a reasonable acquisition cost was only $617, primarily because of the large outstanding debt that the acquirer would have to assume and the poor condition of the system. BHC was ordered to spread the cost of system improvements (estimated at $191,000) among its 96,000 customers in order to reduce the financial burden of the upgrade on the Greenacres customers. The approved acquisition costs, not including the original net cost of the plant, was required to be charged to a deferred debits account for amortization over four years. DOHS and DPUC decided to allow BHC to include unamortized acquisition costs in its rate base, as the company had requested.

DOHS and DPUC ruled that Greenacres customers should be billed at their old rate until all the residences had been metered. Then BHC could bill them at the same rate as its other customers in the area. BHC was also given a schedule for system improvements and was required to submit certain financial information to DPUC. The company was also required to notify the Greenacres customers of its ownership.

Connecticut's takeover legislation allowed the State to facilitate acquisition by a privately owned utility to correct the problems of a non-viable system. The State acquisition hearing on Greenacres determined the following: who should take over the failing system; the acquisition cost; what system improvements must be undertaken by the acquiring system; and what rates the customers of the acquired system should be charged.

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ACQUISITION OF HELMS, INC.–PRIVATE MERGERS

SUMMARY: The acquisition of Helms, Inc., a small privately-owned water system, by Connecticut Water Company (CWC) shows how the State primacy agent and the PUC can jointly order water systems to act as receivers, to implement specific system improvements on a time schedule, and to acquire other water systems.

Under Connecticut General Statutes 16-262, the Department of Health Services (DOHS) and the Department of Public Utility Control (DPUC) called a hearing to find a suitable water company to acquire the two divisions of Helms, Inc., Nathan Hale and Lakeview in Coventry, Connecticut. These two water systems had a history of repeated outages, and the owners of Helms, Inc. had failed to comply with seven Administrative Orders from DPUC and DOHS. These systems had severe engineering deficiencies, and had an old, poorly maintained system in need of reconstruction. No corrective action was being taken by the owners.

Helms, Inc. provided water to 169 unmetered residential customers and 10 seasonal customers. There were no treatment facilities at either Nathan Hale or Lakeview. The owners had difficulty maintaining contracts with licensed pump companies, resulting in periods during which no maintenance took place.

A temporary receiver had previously been appointed under CGS 16-262l, who incurred liabilities for the maintenance of the system. DPUC and DOHS subsequently recommended that the CWC acquire Helm, Inc. CWC was required to pay the receiver an amount equal to his liabilities; this amount was added to the cost of acquisition that CWC was allowed to recover through its rates.

Two years after the Joint Hearing, the former Helms customers were being charged a flat rate of $307.80 per year as stipulated in the Decision. When system upgrades are completed, customers will be metered and charged the same rate as all other CWC customers, which in 1988 was $315 per 72,000 gallons of water per household.

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3.0 RECOMMENDATIONS AND IMPLEMENTATION ISSUES

The purpose of this chapter is to present steps that State drinking water administrators can take to implement one or more of the options described in Chapter 2. The chapter is divided into three sections:

- Recommendations,
- Implementation issues, and
- Conclusion.

The recommendations span a broad range. At the simplest level, a State drinking water program could adopt a policy endorsing one or more options. At the most complex level, the State could develop a comprehensive program of resource planning, mergers, and acquisitions. The implementation issues section then examines the various factors that will influence States' decisions in choosing which methods to use.

3.1 Recommendations

The recommendations in this chapter can be categorized along at least two dimensions. Some of the recommendations are methods of directly implementing an option (e.g., developing satellite management plans). Others are indirect (e.g., extending operator certification requirements to [illegible] small systems, which will increase the demand for contracted O&M services). Another dimension is their cost to the State primacy agency. For example, a low-cost approach would be merely to adopt a policy endorsing the options in Chapter 2. In contrast, development of a comprehensive area-wide water resource planning program would require substantial investment. The table on the following page introduces the recommendations and categorizes them along these two dimensions.

3.1.1 Develop a Policy

One way a State can promote the options described in Chapter 2 is to adopt them as policy. A State's commitment could take the form of a policy statement or a guidance document that is distributed to primacy agency staff, informing them that the State:

- Believes that non-viable small systems are a problem; and
- Endorses the use of the restructuring options described in this report as potential solutions.

The most time-consuming aspect of the policy development process will likely be the selection of specific options to endorse. This may entail, for example, deciding which of them are useful, and whether some are more consistent than others with the State's overall philosophy toward non-viable systems. Some States believe, for example, that their small-system strategy should prevent the creation of new, non-viable systems altogether and should eliminate existing ones. Promoting mergers and acquisitions is most consistent with this philosophy.

TABLE 3.1
SUMMARY OF RECOMMENDATIONS

Recommendation	Direct or Indirect	Cost
Develop a Policy	Direct	Low
Conduct Outreach	Direct	Medium
Develop Satellite Plans	Direct	Medium
Obtain Authority to Implement Involuntary Mergers/Acquisitions	Direct	Medium
Strengthen Operator Certification Requirements	Indirect	Low
Implement Operating Permits	Indirect	High
Conduct Area-wide Planning	Indirect	High

Another consideration for State policy makers is the impact of their policy on system owners and operators. Adopting a policy that endorses mergers and acquisitions, for example, may seem to be "anti" small systems. Owners, operators, and customers may not understand that this policy is directed at non-viable small systems. Misunderstanding about the policy could damage its overall effectiveness.

Finally, if the policy affects other State agencies, these agencies should be consulted before the policy is issued. For example, a policy promoting mergers and acquisitions of (or by) privately owned systems may require the active participation of the State's PUC. Similarly, a policy that promoted the acquisition of non-viable mobile home parks might impact the State's Department of Housing and Community Development. If, for example, one outcome of the policy was an increase in costs for mobile home park residents, this might affect the State's supply of affordable housing. A policy that would result in increased water rates may affect State agencies concerned with the elderly or with low-income households. In general, if other agencies are going to be affected, they should be involved in the policy making process, or informed about the policy before it is promulgated.

3.1.2 Conduct Outreach

A second step that States could take--one that is more resource-intensive than simply adopting a policy--is an outreach program that informs system owners and operators about the options discussed in Chapter 2. As we explained in that chapter, any of these options

could be adopted voluntarily by small systems. A system could, for example, take the initiative to:

- Contract for O&M services,
- Seek a satellite management arrangement,
- Join with other systems in a cooperative buying arrangement, or
- Merge or be acquired by a larger system.

A State policy endorsing any of these options might encourage such voluntary action, but owners and operators are more likely to act if they have useful information. Few State primacy agencies even maintain lists of qualified O&M service providers. At a minimum, systems need to know:

- The options and how they work,
- The benefits of each option,
- The costs of each option, and
- If they need to purchase services, who provides these services.

It would also be useful to have:

- Examples of systems that have successfully tried each of the options and would be willing to discuss their experiences; and
- Analyses of why particular solutions worked (or failed) for different types of problems

There are many ways of disseminating this information. At the simplest level, the information could be provided to State agency staff who are likely to talk with system owners and operators--e.g., field engineers, sanitarians, and central office staff who answer telephone inquiries from systems.

Another relatively easy and inexpensive way to disseminate information is to make use of existing forums for drinking water professionals. Information disseminated at these meetings could range from simple fact sheets to case studies.

The State can use existing newsletters to furnish the following information: case studies with phone numbers of knowledgeable system operators and State personnel, stories about innovative systems, discussions of current or pending regulations, and updates on State policy. Newsletters that might be used include those of State affiliates of the National Rural Water Association and the State section of the American Water Works Association. Working with these organizations would help offset the cost of implementing an outreach program.

A more expensive step, but a very useful one, is for the State to produce a guide that discusses small system problems and how the options discussed in Chapter 2 could be

used to overcome them. Ideally it would include detailed case histories from the State. A memorandum could be distributed to all systems (e.g., at the time of sanitary surveys) notifying them that such a guide is available upon request. The guide also could be advertised in newsletters or at meetings.

If the State wishes to promote O&M contracting, it could maintain a registry of qualified O&M service firms. A more ambitious project would be to develop a certification program to assure State review of these firms' qualifications and service histories.

Finally, an important characteristic of many of the options in Chapter 2 is that they are voluntary actions by water system owners and operators--actions that establish contractual relationships. The State drinking water agency can promote these actions by publishing sample contract language that could be used by the systems.

3.1.3 Develop Satellite Management and Ownership Plans

Satellite arrangements between large and small water systems may encompass the operation, management, or outright ownership of the smaller systems. States can encourage the voluntary formation of such arrangements, and they can often force their creation through permit reviews or area-wide plans as discussed in Section 3.1.7. States should approve the plans for satellite arrangements before they are initiated to be sure they conform to operating permit requirements. During this review, States can ensure that the satellite owner or manager will correct small system problems in a timely fashion. In addition, States can promote satellite management and ownership by providing grants to water systems that conduct satellite planning and assessment.

The State of Washington actively promotes satellite management and ownership. The Washington drinking water program is currently developing recommendations for increasing satellite management and ownership. In addition to its authority to require satellite systems to correct small system problems, Washington encourages water systems to develop satellite management and ownership plans on a voluntary basis whenever feasible. The State's regulations allow the following types of organizations to fund, construct, and operate water systems, and to contract with other entities to provide water service (i.e. become satellite owners or provide satellite management services):

- Counties,
- Municipalities,
- Metropolitan municipal corporations,
- Water districts,
- Public utility districts,
- Non-profit corporations,
- Cooperative associations of five or more persons, and
- Private companies that already serve more than 60 customers.

Like Washington, Maryland actively encourages satellite arrangements through its county planning process. Public Utility Districts are required to assess the need for satellite management and ownership within their jurisdictions. If Maryland officials find that a system potentially threatens public health, they may require that the system be taken over.

For additional information on how this option has been used, States may contact Mr. D. William Liechty in Washington at 206-753-5954 or Mr. William F. Parrish, Jr. in Maryland at 301-631-3702.

3.1.4 Obtain Authority to Force Mergers and Acquisitions

Many of the options described in Chapter 2 depend entirely on voluntary actions by water system owners and operators. Sometimes, however, voluntary action is not enough. There are conditions under which States must compel involuntary mergers and acquisitions. In particular, States may wish to order the acquisition of small systems that are financially or technically unable to provide safe drinking water. Most States do not have the authority to do so under existing drinking water statutes.

An example of how such authority might be structured is provided by the Connecticut experience. Section 16-262l(b) of the Connecticut laws provides:

> If the Department of Public Utility Control determines, after notice and hearing, that any water company is unable or unwilling to provide adequate service to its consumers, the department may petition the superior court for any judicial district wherein the company conducts its business for an order attaching the assets of the company and placing it under the sole control and responsibility of a receiver.

This enables the temporary appointment of a receiver to manage a failed system until the State has developed a permanent solution. Connecticut laws further stipulate (Section 16-262o) that:

> The Department of Public Utility Control, in consultation with the Department of Health Services, upon a determination that the cost of improvements to and the acquisition of the water company are necessary and reasonable, shall order the acquisition of the water company by the most suitable public or private entity.

Other States may be able to use similar language in drafting their own legislation. The Connecticut laws regarding receivership and acquisitions are reproduced in Appendix B of this report.

In addition to giving State agencies the authority to compel involuntary mergers or acquisitions, the legislation also could specify conditions under which such authority should be exercised. For example Connecticut lists the following conditions which must exist before the State orders the takeover of a system (Section 16-262l(c)):

- The company has failed to supply water to consumers for at least five days during the preceding three months,

- The Department of Health Services determines that the company has not met the public drinking water standards, or

- The company is being grossly mismanaged and is providing inadequate service to its customers.

State laws may also establish procedures and assign responsibility for:

- Requiring failed systems to make the necessary improvements,

- Determining compensation between merging water companies, and

- Setting water rates after merger.

For additional information on obtaining the authority to force mergers and acquisitions, States may contact Mr. Richard Albani in Connecticut at 203-827-1553.

3.1.5 Strengthen Operator Certification Requirements

States can encourage small systems to consider O&M contracting and satellite management by passing laws that require all public water systems to have certified operators. As we explained in Chapter 2, many small systems cannot afford to hire their own full-time certified operators. These requirements force small systems to consider alternatives such as O&M contracting. Although forty-five States have mandatory operator certification requirements[1], small and very small systems are sometimes excluded. By requiring all systems, regardless of size, to have certified operators, States will indirectly support O&M contracting.

In practice, operator certification laws have created market conditions that facilitate the development of private service companies and satellite management programs. Several States report that O&M contracting increased after their States established operator certification requirements. For example, Mississippi recently passed a certification law and noted a subsequent rise in the number of private service companies in operation. A drinking water staff member from Maine also remarked that satellite programs increased with stricter enforcement of certification requirements.

One issue that a State must consider when recommending operator certification is operator liability. Some States hold contract operators accountable for the compliance of systems they operate. Problems arise when contract operators continue to be held liable even when system owners are unwilling to implement the contractor's recommendations for system improvements. For example, if a contract operator recommends buying a new chlorinator in order to correct an MCL violation, and the system owner refuses to do so, the contract operator would still be held responsible by the State. To avoid these types of disputes, States may want to modify laws and regulations regarding the liability of contract operators.[2]

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[1]Delaware, Hawaii, Idaho, Nevada, and Rhode Island do not have mandatory operator certification requirements.

[2]The issue of liability is discussed in greater detail in Section 3.2, below.

Another consideration is State oversight of the private service companies and the large utilities that provide operator services. Iowa currently maintains a list of satellite operators and the systems they manage. Both the "parent" utility and the satellite system must sign a form with the Department of the Environment citing their involvement in a satellite management program. If a parent utility manages more than one system, it must sign more than one form. Although this approach allows the State to oversee satellite management, it does not directly address the issue of quality assurance.

The primacy agency may want to implement a separate quality assurance program to verify the capabilities and the services of the firms offering O&M contracting. In doing this, it may wish to regulate the number of systems a service company or parent utility services. By establishing a limit to the number of systems an O&M contractor can operate, the State can prevent contract operator abuse. For example, certified operators would not be able to "sell" their certification by simply signing the required paperwork for a number of systems without actually improving their operations.

3.1.6 Implement Operating Permits with Financial Requirements

Many State primacy agencies recognize operating permits as a valuable tool in compliance and enforcement programs. The power to impose operating requirements or to withdraw a permit altogether gives the State broad authority over a system's activities. States have used the permitting process to set financial, operational, and managerial standards that systems must meet to obtain (or retain) their operating permits.

By addressing a broad spectrum of issues relating to finances, operations, and management, the State permit review can be a powerful instrument for assessing the viability of small systems. It can be used to prevent the formation of new systems that are inadequately designed or financed, and to identify existing systems that have such problems currently or that may develop them in the future. By identifying these systems early and developing appropriate remedies, the State can often prevent non-compliance with drinking water regulations before it occurs.

A permit review may conclude that a system does not have the financial or managerial capacity to make needed improvements, or indeed to continue operating as an independent entity. In such a case, the State can often use its findings to encourage or force changes in the system's operations. These changes can include any of the measures discussed in Chapter 2, such as contracting out for O&M services, entering into satellite management agreements with other utilities, or merging with a larger water system.

Several States already use the permitting process to accomplish these goals. Washington, for example, requires systems to prove that they have adequate funds and managerial capability to carry out anticipated future system improvements during permit review. If the State or county planners determine that alternative managerial arrangements such as satellite management agreements or mergers are needed, public utility district commissions work with the system to develop a plan. The plans must be approved by the State's drinking water program to determine if the arrangement has sound management, financial, and technical structure in compliance with system operating permit requirements. The plans are binding; enforcement action may be taken against the systems for not complying with either operating permits or county plans.

The Maryland Department of Environment (MDE) requires privately owned water systems to submit financial, managerial and operational data and to maintain an escrow account to ensure continued viability. The escrow account requirements are drawn up in a binding Public Works Agreement between the system owner and county officials. These financial requirements must be fulfilled before construction permits are granted. They are also included in the operations and maintenance plans that must be submitted to the State before operating permits are granted. The escrow account requirements may include depositing funds for repair or replacement of water treatment facilities, funds to ensure successful initial operation and maintenance, or a sinking fund, sufficient to replace the system 20 years after construction. Funds for continued support of this sinking fund are provided within the rate structure. This requirement encourages systems to seek mergers and satellite arrangements during the planning stages and throughout the life of the system by requiring systems to anticipate future costs.

The mere existence of the permit review process may cause systems to improve their operations and finances voluntarily. The knowledge that they must provide financial information can encourage marginal systems to assess their capabilities and seek alternative arrangements without the need for State involvement.

Public Utility Commissions (PUCs) can help State primacy agencies conduct financial reviews of privately owned public water systems. PUCs have authority to review rates and adequacy of service over privately owned water systems in 45 States.[3] Although their specific authority varies from State to State, PUCs generally must approve the financial, managerial, and operational capability of water systems under their jurisdiction. They must also approve system mergers. PUC reviews, if coordinated with the primacy program, can help ensure that a merger or acquisition will alleviate the problems the small system faced prior to restructuring. Note, however, that most State PUCs do not have jurisdiction over all sizes and types of public water systems. Therefore, this type of cooperation may be limited to certain system categories.

In some States, the drinking water agency and the PUC cooperate closely in developing requirements for drinking water systems. Connecticut has implemented a program in which the primacy agency and the PUC jointly issue an operating permit, in the form of a Certificate of Public Good. In addition to the site, source, and construction requirements normally imposed on public water systems, the joint Certificate process includes an extensive analysis of the system's finances and operations. The documents reviewed include balance sheets, proposed rate structures, tax returns, capitalization plans, managers' and operators' qualifications, operational plans, and plans for future improvements and system expansion. Vermont is currently studying whether to implement a similar joint Certificate program.

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[3]A 1989 survey by the National Regulatory Research Institute (NRRI) identified 4,527 investor-owned utilities under jurisdiction of State commissions. This represents approximately 46 percent of the systems regulated by State commissions. PUCs in Arizona, California, Florida, New York, North Carolina, Pennsylvania, and Texas were each responsible for several hundred water companies, while other State commissions regulated fewer than a dozen.

For additional information on operating permits with financial reviews, States may contact Mr. Richard Albani in Connecticut at 203-827-1553, Mr. William Parrish, Jr. in Maryland at 301-631-3702, or Mr. D. William Liechty in Washington at 206-753-5954.

3.1.7 Conduct Area-Wide Planning

Area-wide planning is a mechanism for ensuring that existing public water systems can meet current and anticipated demand for safe drinking water. Plans can be developed on a county or regional basis. States can require planning bodies to address small-system viability problems in their area-wide plans. Such plans can be used as the vehicle for encouraging the kinds of managerial and financial changes discussed in Chapter 2.

An important characteristic of area-wide planning is that it requires counties or other regional bodies to share responsibility with the State over ensuring small system viability. Counties or other regional bodies must develop and implement solutions for non-viable small systems. County or regional plans incorporate individual water system plans into coordinated area-wide plans. These plans must meet guidelines and requirements established by the State. The primacy agencies approves the plans to ensure that they meet the technical, financial, managerial, and operational requirements of the drinking water program.

Successful area-wide water plans in Connecticut, Maryland and Washington include the following elements:

- initial and periodic plan review by the primacy agency;
- identification of present and future service areas for the large water systems (at least) in the region;
- assessment of existing systems' financial, technical, managerial and operational capabilities; and
- measures implementation of cooperative programs, contracted services, mergers, and other steps that can be used to resolve small-system problems.

To ensure continued viability, States require plans to be updated if the status of any of the water systems in the area changes, if water supply contamination occurs, or if new water service is required. If a small system cannot comply with drinking water regulations, the planning body is required to reach agreement on how to address the system's deficiencies. In addition, because these plans require long-range projections of system capabilities, they often anticipate water system failures. This allows alternative solutions to be planned before the compliance problems become severe.

For additional information on conducting area-wide planning, States may contact Mr. Richard Albani in Connecticut at 203-827-1553, Mr. William Parrish, Jr. in Maryland at 301-631-3702, or Mr. D. William Liechty in Washington at 206-753-5954.

3.2 Implementation Issues

A State's decision to adopt one or more of the above recommendations will depend on many factors. Several States have raised implementation issues associated with these recommendations, and we provide brief discussions of each in the following pages.

3.2.1 State Philosophy Regarding Small Systems

As we suggested in Chapter 1, there are two philosophies that States might adopt toward non-viable small drinking water systems. The first is to develop a program that will promote the elimination of these systems. This philosophy assumes that the problems of non-viable systems are so serious that they cannot effectively be addressed by partial or temporary remedies. Furthermore, it assumes that the problems facing non-viable systems will increase as new regulations are implemented in the 1990s. Therefore, the only appropriate solution is to: (1) oppose the creation of new small systems that might become non-viable; and (2) eliminate existing non-viable systems.

The alternative stance assumes that States should devote resources to programs that might remedy the problems of small non-viable systems. Rather than trying to eliminate non-viable systems, States should work with these systems to restore their viability.

A State's choice of philosophy will direct its choice of remedies for non-viable systems. For example, a State that believes that elimination of non-viable systems is the most effective long-term strategy would promote mergers and acquisitions. In addition, a State having this attitude might oppose contracting out for O&M services on the grounds that this is a temporary solution for a problem that will ultimately reappear. By temporarily restoring viability to a non-viable system, the State removes some of the pressure that otherwise might force that system to merge with a more stable one.

3.2.2 Cost to the State Drinking Water Program

Before taking any action, State drinking water administrators will want to know what these recommendations will cost. On the basis of several States' experience, we provide on the following page a table of ranges (high and low) in units of full-time-equivalent person-years (FTEs).[4]

3.2.3 Liability

Liability can be an obstacle to small water systems that seek contract O&M services from private companies or large water utilities. The State normally holds system owners accountable for violations of maximum contaminant levels or of monitoring and reporting requirements. If the owners have contracted for operator services, however, the contract operator may be held liable. Some States' regulations require contract operators to make all necessary system changes to maintain or bring about compliance. If system owners do not agree to make the necessary changes, operators from service companies or utilities would still be held liable by the State. When contractors have liability for systems but no authority to make changes, there is a disincentive for them to provide contract services.

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[4]These estimates will vary depending on the size of the State and the number of systems being regulated.

TABLE 3.2
LEVEL OF EFFORT REQUIRED FOR RECOMMENDATIONS

Recommendation	Initial FTEs	Annual FTEs
Develop a Policy	0 - 0.1	0
Conduct Outreach	0.1 - 0.5	0.1
Develop Satellite Plans	0.1 - 0.3	0
Obtain Authority to Implement Involuntary Mergers/Acquisitions*	0.2 - 0.5	0.4
Extend Operator Certification	0.1 - 0.3	0.2
Implement Operating Permits	0.2 - 0.4	0.2

States can modify their regulations to avoid liability disputes. Oregon, for example recently modified its regulations to state that contract operators must recommend all necessary changes to maintain or bring about system compliance. Thus, compliance responsibility is shifted back to the systems; if it fails to adopt the operator's recommendations, it will be responsible for any resulting violations. Contractor operators can be held liable by the State if they have been negligent. Thus, their liability matches their authority: they are responsible for the accuracy of their work, but system owners are responsible for implementing changes to maintain compliance.

Private water service companies or large utilities can establish their responsibilities and limit their liability through the terms and conditions of their contracts. For example, Waterguard has an indemnification provision in all of its contracts. Systems using Waterguard agree to "hold harmless and indemnify" the firm against any claim, liability or expense incurred during Waterguard's work. This does not release Waterguard from all responsibility; Waterguard's liability is simply restricted to claims or expenses arising from its own negligence or intentionally wrongful actions. For example, Waterguard could be held liable for errors in monitoring and reporting or for overlooking system problems affecting compliance. State drinking water agencies can recommend that service companies and utilities involved in satellite management incorporate an indemnification clause in their contracts to prevent liability disputes.

3.2.4 Cost to the Consumer

Improving a system's operations through a merger, satellite management agreement, or contract O&M is likely to cause an increase in water rates. A system that needs such major restructuring is likely to be in poor condition to start with and to charge artificially low fees. Even if such a system is entirely absorbed by a larger utility, the acquiring

company will probably want to pass some of the cost of improvements on to the smaller system's customer base. Rate-setting bodies such as PUCs or water districts may then find themselves being asked to meet conflicting demands. The merged utility will want to gain the revenue needed to pay for improvements, while customers will press for affordable water rates. State drinking water administrators should be prepared to advise rate setters on the level of rate increases necessary to protect the public's water supply.

3.2.5 Disincentives for Private Mergers and Receivership

There are several disincentives to private mergers, some of them the result of longstanding PUCs practices. Rules governing the assessment of assets of acquired companies--devised for the oversight of large electric, gas, and telephone utilities--have inhibited the takeover of small, non-viable systems by making them financially less attractive. State administrators need to address these problems in order to facilitate mergers and receivership. For example, in some States, PUCs are reluctant to allow water utilities to spread the costs associated with bringing an acquired system into compliance across their entire customer base. Because there is a limit to the water rates people will pay (and commissions will allow), acquisitions are discouraged when it would cost a great deal to bring a small system into compliance with regulations. Additionally, changes in Federal tax law enacted in 1986 have made taking over ailing systems less attractive.

Lack of Financial Assistance

Grants, loans, and other forms of financial assistance extended by States and communities for small system upgrades are usually not available to private companies. Privates must, instead, turn to the regular financial markets if they require funds for system expansion or improvements. There they can anticipate high interest costs due to their small size and lack of experience in borrowing. Some of the water holding companies are large enough, and have enough experience in capital markets, that the financial aspects of restructuring present few problems if debt costs can be recovered through operations.

Excess Acquisition Costs

Most PUCs require public water utilities to use the Uniform System of Accounts, which requires utilities to record assets on the basis of their depreciated original cost rather than their replacement cost. A water company taking over a fully depreciated small system would see the book value of its assets increase only slightly or not at all, despite its having paid, in most instances, some agreed purchase price. As water rates are determined in part by the rate base, defined as the assets of the company that are "used and useful" in providing the public service, this depressed book value results in a lower water rate, and lower profits, for the acquiring utility.

The Uniform System of Accounts' treatment of original cost was adopted to provide an easy basis of comparison among utilities and to prevent abuses in the valuation of utility assets. In the restructuring of small water systems, however, it makes mergers less attractive by depressing profit potentials associated with acquiring small systems that need large capital investments to bring them in compliance with stricter regulations. The result is that many water companies do not consider takeovers of small, ailing systems to be financially viable.

Critics note that the previous owner of a small system, having depreciated the system for tax advantages, incurs a tax liability when selling the system for more than its book value. The acquiring company, they argue, should then be able to value the system at its purchase price when calculating its rate base. This treatment of the excess acquisition cost would more accurately reflect the costs to the acquiring company. The unique characteristics of small water companies, then, might warrant changes in the usual accounting methods for excess acquisition costs. Although several options are available, most involve allowing some amortization of the excess acquisition cost, with a provision for including the unamortized balance in the rate base.

Contributions in Aid of Construction

Similar to the problem of excess acquisitions costs, "contributions in aid of construction" are also disallowed in rate base calculations by most PUCs. The rationale for disallowing contributions is that if they were factored into the rate base consumers would, in a sense, be forced to pay twice, first for their share of the original system costs and then for profits based on the value of the system. The problem arises typically for homeowners associations because the cost of the original treatment and distribution equipment is factored into the selling price of a lot or home and is treated as a contribution for accounting purposes. If the entire system is financed through such contributions, the allowable rate base would be zero, meaning that an acquiring company might realize little profit for its investment.

Changes in Federal Tax Law

Prior to the 1986 Tax Reform Act, many private-sector projects benefitting the public were eligible for tax-exempt financing. Lower costs of capital were passed along to consumers in the form of lower water rates. The Act eliminated these exemptions, however, and raised the cost of financing improvements required under the SDWA.

Another change under the Act is that contributions in aid of construction are now counted as income to utilities, and are, therefore, taxed at a higher rate. Although this provision mainly serves to discourage the creation of new private companies, it also hinders expansion of existing water systems, many of which would benefit from the economies of scale expansion would bring about.

3.3 Conclusion

State drinking water administrators have many options available to them to improve the viability of existing small systems. These options range from developing a policy which endorses one of the solutions discussed in this report to conducting area-wide planning to ensure that existing systems meet the State's technical, financial, and managerial standards. To decide which options are best-suited for each State, drinking water programs must evaluate factors such as their overall philosophy towards small systems, costs to the State drinking water program and to consumers, liability concerns, and State PUC rules and practices.

APPENDICES

EXHIBIT A

MEMORANDUM OF AGREEMENT

This agreement is between Waterguard, Inc. (Waterguard) and

Statement Of Intent - It is the intent of this agreement for Waterguard to provide and to receive the professional services of a part time state-certified Class I water system operator (Operator). Only the services described in this Agreement or those later appended by written mutual consent are incorporated in this Agreement. This Agreement is intended to assist in its basic compliance with Oregon state laws and regulations pertaining to minimum operating standards for community water systems.

RESPONSIBILITIES

Waterguard - Waterguard will provide and supervise the services of an Operator who possesses a valid Class I certificate of competency issued by the State of Oregon. The Operator will perform or provide for the performance of water system services as mutually agreed upon and authorized under State of Oregon Class I Water Distribution certification. Such services are limited to those necessary to consistently satisfy the minimum health standards of the State of Oregon for community water systems. The basic Operator services mutually agreed upon as of the date hereof are itemized in the ensuing section entitled "Specific Services". The services will be provided on a mutually agreed-upon schedule. Additional services may be added to this Agreement from time to time by written consent of Waterguard and .

_____ - as owner of the water system will provide guidance and direction to the Operator to the extent necessary for timely decisions and direction on any action, expenditure or work needed to keep the system in compliance with State health standards for community water systems.

agrees to take whatever steps are required by federal and state law and Oregon Health Department regulations to keep the system in compliance with all current and future community water system minimum standards.

agrees that the physical plant, assets, liabilities and legal obligations connected with the ownership and operation of the system are its exclusive responsibility and not that of the Waterguard or Operator.

acknowledges that insurance coverage desired by in connection with this Agreement, including but not limited to errors and omissions coverage, will be the responsibility of .

SERVICE FEES

Waterguard - will pay $40.00 per hour exclusive of travel time, for the Operator's services. Waterguard agrees to itemize its charges and bill monthly for Operator services. Billings shall be in one-quarter hour increments.

Continued

- will pay all agreed upon Waterguard billings for Operator services within 30 days of receipt.
will periodically review the Operator's work, reports and recommendations and promptly advise the Operator of any changes in the scope or nature of services it desires.

HOLD HARMLESS AGREEMENT

Indemnification - will hold harmless and indemnify Waterguard, and its officers, agents, and employees against any claim, liability, or expense incurred by Waterguard arising out of its work under this agreement, except to the extent that the claim, liability or expense arises out of alleged negligent or intentionally wrongful actions or failures to act of Waterguard or its officers, agents or employees.

EXCLUSIONS

LABORATORY SERVICES - All laboratory charges for testing, analysis or evaluation of the quality/quantity of the system's water will be in addition to the fees mentioned in this Agreement.

SYSTEM REPLACEMENT, OPERATION AND REPAIR COSTS - all system replacement, operation and repair costs will be the responsibility of Villa.

SPECIFIC SERVICES

The Operator will advise on the requirements necessary to keep the system in compliance with all laws and regulations. The Operator will perform or provide, consistent with reasonable and customary standards, all basic community water system operational and management services required to keep the system in compliance with the following requirements as well as any other requirements arising out of laws or regulations hereafter existing:

1. Responsibilities Of Water Supplier as required by OAR 333-61-025 (attached);
2. Maximum Contaminant Levels as required by OAR 333-61-030 (attached);
3. Sampling And Analytical Requirements as required by OAR 331-61-035 (attached);
4. Reporting, Public Notification And Record Keeping as required by OAR 333-61-040 (attached);
5. Construction Standards as required by OAR 333-61-050 (attached);
6. Plan Submission And Review Requirements as required by OAR 333-61-060;
7. Operation And Maintenance as required by OAR 333-61-065 (attached);
8. Cross Connection Control Requirements as required by OAR 333-61-070 (attached);
9. Fluoridation as required by OAR 333-61-085 (attached);
10. Product Acceptability Criteria as required by OAR 333-61-087 (attached).

Continued

The OAR Chapter 333 sections listed above and any subsequent changes made to them are by this reference included in and made a part of this agreement.

DESIGNATION OF OPERATOR

Waterguard hereby designates Don Weidner as the Operator to perform the services described in this agreement. Waterguard agrees to notify in writing and obtain written agreement prior to making any changes in its Operator designation.

ADDITIONAL SERVICES

This Agreement may be modified, expanded or limited at any time by the written mutual consent of both and the Waterguard. Notice of a proposed change will be given by the proposing party to the other party at least 30 days prior to the effect of the proposed change.

OFFICIAL CORRESPONDENCE

Waterguard and agree to designate an official address and telephone number to which each may send all official communications to the other. Both parties to this agreement will promptly advise the other of any changes in addresses and phone numbers.

TERMINATION OF AGREEMENT

This Agreement can be terminated by either party with 30 days written notice to the other party. Waterguard will be paid for all services provided to hereunder prior to receipt of notice of termination or to such later date as the notice may specify.

EFFECTIVE DATE

This agreement will be effective as of

Signed _____

_____
Title

Signed _____
Date

_____
Title

Setting within established department of banking regulation P.A. 81-128 consolidated Subsec. (a) and (b) into Subsec. (a) and added new Subsec. (b) requiring companies to pay interest on customer security deposits at a set rate

Sec. 16-262k. Interconnection of public water supply systems to relieve site-specific water shortages. The department of public utility control may require any water company as defined in section 16-1 to connect its public water supply system with that of another water company or municipal utility if it finds that such a connection would be an effective means of relieving site-specific water shortages.

(P.A. 81-358, S. 3.)

Sec. 16-262l. Receivership of water companies for failure to provide adequate service. Personal liability of directors, officers and managers. (a) As used in this section, "water company" includes every corporation, company, association, joint stock association, partnership or person, or lessee thereof, except an association providing water only to its members, owning, leasing, maintaining, operating, managing or controlling any pond, lake, reservoir, stream, well or distributing plant or system employed for the purpose of supplying water to twenty-five or more consumers on a regular basis, provided if any corporation, company, association, joint stock association, partnership or person, or lessee thereof, owns or controls eighty per cent of the equity value of more than one such water supply system, the number of consumers shall, for the purposes of this definition, be the total number of consumers of all such systems so controlled by that corporation, company, association, joint stock association, partnership or person, or lessee thereof.

(b) If the department of public utility control determines, after notice and hearing, that any water company is unable or unwilling to provide adequate service to its consumers, the department may petition the superior court for any judicial district wherein the company conducts its business for an order attaching the assets of the company and placing it under the sole control and responsibility of a receiver.

(c) Notwithstanding the provisions of subsection (b) of this section, the department, the municipality served by a water company or an organization representing twenty per cent of the consumers of the company may, upon notice to the company, petition the superior court for an order attaching the assets of the water company and placing it under the sole control and responsibility of a receiver, if (1) the company has failed to supply water to consumers for at least five days during the preceding three months, (2) the department of health services determines that the company has not met the standards adopted under section 25-32 for the quality of public drinking water or (3) the petitioner has reasonable cause to believe the consumers of the company have not received and are unlikely to receive adequate service due to gross mismanagement of the company. Upon the filing of such a petition, the court shall order the company to show cause why such an order of attachment and receivership should not issue ten days from the date of service of the order to show cause upon the company at its last known address.

(d) Any receiver appointed by the court shall file a bond in accordance with section 52-506 unless the court finds it unnecessary. The receiver shall operate the company to preserve its assets and to serve the best interests of its consumers. If the receiver determines that the water company's actions which caused it to be placed under the control and responsibility of the receiver under subsection (b) or (c) of this section were due to misappropriation or wrongful diversion of the assets or income of such company or to other wilful misconduct by any director, officer or manager of the company, the

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receiver shall file a petition, with the superior court that issued the order of attachment and receivership, for an order that such director, officer or manager be ordered to pay compensatory damages to the company by reason of such misappropriation, diversion or misconduct.

(e) The department of public utility control shall determine the value of the assets of a water company at the time of appointment of a receiver and immediately prior to return of the assets to the owner. The claim of the owner of the company shall be limited to the value determined at the time of the appointment of the receiver. The assets shall be returned to the owner after full restitution has been made to the receiver for the value of any improvements to the system and after payment has been made for any appraisal pursuant to this subsection.

(P.A. 81-358, S. 4; P.A. 82-472, S. 51, 183; P.A. 83-542; P.A. 84-330, S. 7.)

History: P.A. 82-472 made technical correction in Subsec. (a); P.A. 83-542 added Subsec. (c), allowing, in addition to department, municipalities and organizations representing water company consumers to petition superior court for receivership in certain situations and providing for expedited judicial proceedings in such situations and added provisions in Subsec. (d) allowing receiver to petition superior court in certain situations for order that director, officer or manager pay compensatory damages to company; P.A. 84-330 added Subsec. (e) re valuation of assets of water company.

Sec. 16-262m. Construction specifications for water companies. (a) As used in this section, sections 16-262n to 16-262q, inclusive, and section 8-25a, "water company" includes every corporation, company, association, joint stock association, partnership, municipality, other entity or person, or lessee thereof, owning, leasing, maintaining, operating, managing or controlling any pond, lake, reservoir, stream, well or distributing plant or system employed for the purpose of supplying water to not less than fifteen service connections or twenty-five persons nor more than two hundred fifty service connections or one thousand persons on a regular basis.

(b) No water company may begin the construction or expansion of a community water supply system on or after October 1, 1984, without having first obtained a certificate of public convenience and necessity for the construction or expansion from the department of public utility control and the department of health services. An application for a certificate shall be on a form prescribed by the department of public utility control in consultation with the department of health services and accompanied by a copy of the water company's construction or expansion plans and a fee of one hundred dollars. The departments shall issue a certificate to an applicant upon determining, to their satisfaction, that (1) no feasible interconnection with an existing system is available to the applicant, (2) the applicant will complete the construction or expansion in accordance with engineering standards established by regulation by the department of public utility control for community water supply systems, (3) the applicant has the financial, managerial and technical resources to operate the proposed water supply system in a reliable and efficient manner and to provide continuous adequate service to consumers served by the system, (4) the proposed construction or expansion will not result in a duplication of water service in the applicable service area and (5) the applicant meets all federal and state standards for community water supply. Any construction or expansion with respect to which a certificate is required shall thereafter be built, maintained and operated in conformity with the certificate and any terms, limitations or conditions contained therein.

(c) The department of public utility control, in consultation with the department of

health services, shall adopt regulations in accordance with the provisions of chapter 54 to carry out the purposes of this section.

(P.A. 81-427, S. 1, 3; P.A. 84-330, S. 1.)

History: P.A. 84-330 amended Subsec. (a) to apply definition of water company "to sections 16-262n to 16-262q, inclusive, and section 8-25a" to include municipalities in such definition and to expand the definition by including companies supplying water to not less than fifteen service connections or twenty-five persons nor more than two hundred fifty service connections or one thousand persons, amended Subsec. (b) to require, as a condition for issuing a certificate that determination be made that no feasible interconnection with an existing system is available and that applicant meets all federal and state standards for community water supply and amended Subsecs. (b) and (c) to require department of public utility control and health services to jointly carry out purposes of the section.

Sec. 16-262n. Failure of water company to comply with orders. Hearing. Whenever any water company fails to comply with an order issued pursuant to section 16-11, 25-32, 25-33 or 25-34 concerning the availability or potability of water or the provision of water at adequate volume and pressure, the department of public utility control and the department of health services may, after notice to public and private water companies, municipal utilities furnishing water service, municipalities or other appropriate governmental agencies in the service area of the water company, conduct a hearing in accordance with the provisions of section 4-177 to determine the actions that may be taken and the expenditures that may be required, including the acquisition of the water company by the most suitable public or private entity, to assure the availability and potability of water and the provision of water at adequate volume and pressure to the persons served by the water company.

(P.A. 84-330, S. 2.)

Sec. 16-262o. Acquistion of water company. Rates and charges. (a) The department of public utility control, in consultation with the department of health services, upon a determination that the costs of improvements to and the acquisition of the water company are necessary and reasonable, shall order the acquisition of the water company by the most suitable public or private entity. In making such determination, the department shall consider: (1) The geographical proximity of the acquiring entity to the water company, (2) whether the acquiring entity has the financial, managerial and technical resources to operate the water company in a reliable and efficient manner and to provide continuous, adequate service to the persons served by the company and (3) any other factors the department deems relevant. Such order shall authorize the recovery through rates of all reasonable costs of acquisition and necessary improvements. A public entity acquiring a water company beyond the boundaries of such entity may charge customers served by the acquired company for water service and may, to the extent appropriate, recover through rates all reasonable costs of acquisition and necessary improvements.

(b) Notwithstanding the provisions of any special act, the department of public utility control shall extend the franchise areas of the acquiring water company to the service area of the water company acquired pursuant to this section.

(c) In the case of a public entity acquiring a water company beyond its boundaries, the rates charged the customers of the acquired water company shall be subject to the approval of the department of public utility control, upon petition by such customers.

(P.A. 84-330, S. 3.)

Sec. 16-262p. Improvements by acquiring entity. Any recipient of an order pursuant to section 16-262o shall make the necessary improvements to assure the

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availability and potability of water and the provision of water at adequate volume and pressure to the persons served by the water company. The water company shall immediately take the steps necessary for the transfer of the company to the acquiring company, municipal water authority, municipality or other public or private entity.

(P.A. 84-330, S. 4.)

Sec. 16-262q. Compensation for acquisition of water company. Compensation for the acquisition of a water company pursuant to section 16-262o shall be determined by the procedures for determining compensation under section 25-42 or by agreement between the parties, provided the department of public utility control in consultation with the department of health services, after a hearing, approves such agreement.

(P.A. 84-330, S. 5.)

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